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## Abstract

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## Knowledge-Based Systems

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## Domain knowledge query conversation bots in instant messaging (IM)

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## Abstract

In this paper, we examine the use of knowledge query technology as applied to conversation bots in the instant messaging environment. Hence, we designed an artificial intelligent conversation robot or bots called Artificial Intelligence Natural language Identity (hereafter, AINI) to mimic human conversation. Our goal is to introduce a Domain Matrix Knowledge Model and an Automated Knowledge Extraction Agent (AKEA) to create AINI's knowledge bases, and in turn provide intelligent query mechanisms. We report an evaluation on the collection and analysis of a corpus containing over 3280 utterances in a series of real instant messages exchanged between the AINI conversation bot and 65 online "buddies". About 1721 utterances were produced by AINI, 88.03% were from open-domain knowledge, 2.15% from domain-specific knowledge base and 9.82% were inappropriate and amusing responses. These results show that

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domain knowledge plays significant roles in conversations between two or more human users and in human–machine conversation.

## Keywords

Conversation bots; Artificial Intelligent Natural language identity (AINI); Artificial intelligence (AI); Instant messaging (IM)



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